Supplementary Material

**Table S1**: **Summary of statistical analysis of mean differences in *E. coli* count in the soil and chicken litter**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | N | *E. coli* mean count  ( x 107 MPN/g) | | Overall ANOVA p-value | Pair wise comparison  (Games-Howell) | | 95% confidence interval for mean  ( x 107 MPN/g) | | p-value | Statistical  Test used |
| Mean | ±SD |  | Mean difference (±SE) | Lower bound | Upper bound |
| 1 | 48 | 1.52 | 0.72 | 0.003\* | 1 vs 2 | 0.01 (± 0.14) | -0.33 | 0.35 | 0.999 | One way ANOVA; Games Howell |
| 2 | 100 | 1.51 | 0.99 | 1 vs 3 | -0.59 (± 0.22)\* | -1.11 | -0.07 | 0.023\* |
| 3 | 45 | 2.11\* | 1.29 | 2 vs 1 | -0.01 (± 0.14) | -0.35 | 0.33 | 0.999 |
|  |  |  |  | 2 vs 3 | -0.60 (± 0.22)\* | -1.12 | -0.08 | 0.020\* |
|  |  |  | 3 vs 1 | 0.59 (± 0.22)\* | 0.07 | 1.11 | 0.023\* |
|  |  |  | 3 vs 2 | 0.60 (± 0.22)\* | 0.08 | 1.12 | 0.020\* |

\*P<0.05; 1- Soil before litter application; 2- Litter-amended soil; 3- Chicken litter

**Table S2**: **Summary of statistical analysis of differences in the number of antibiotic-resistant *E. coli* in the soil and chicken litter**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | N | Antibiotic resistant *E. coli* | | Overall ANOVA p-value | Pair wise comparison  (Hochberg’s GT2) | | 95% confidence interval for mean | | p-value | Statistical  Test used |
|  | Mean | ±SD |  |  | Mean difference (±SE) | Lower bound | Upper bound |  |  |
| 1 | 10 | 0.10 | 0.32 | <0.001\*\* | 1 vs 2 | -0.68\* (0.11) | -0.97 | -0.39 | <0.001\* | One way ANOVA; Games-Howell Post Hoc test |
| 2 | 88 | 0.78 | 0.41 | 1 vs 3 | -0.83\* (0.11) | -1.12 | -0.54 | <0.001\* |
| 3 | 28 | 0.93\* | 0.26 | 2 vs 1 | 0.68\* (0.11) | 0.39 | 0.97 | <0.001\* |
| Total | 126 | 0.76 | 0.43 |  | 2 vs 3 | -0.14 (0.07) | -0.30 | 0.01 | 0.082 |
|  |  |  |  |  | 3 vs 1 | 0.83\* (0.11) | 0.54 | 1.12 | <0.001\* |
|  |  |  |  |  | 3 vs 2 | 0.14 (0.07) | -0.01 | 0.30 | 0.082 |

\*P<0.05; 1- Soil before litter application; 2- Litter-amended soil; 3- Chicken litter

**Table S3**: **Percentage resistance and multiple antibiotic resistance index per sample point**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample point | No. of isolates | AMP | AMC | LEX | FOX | CTX | CAZ | CRO | FEP | IPM | MEM | NAL | CIP | GEN | AMK | TET | TGC | CHL | SXT | MAR index |
| A | 17 | 6.25 | 1.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.08 | 2.08 | 2.08 | 0.00 | 14.58 | 0.00 | 11.46 | 4.17 | 0.13 |
| B | 12 | 3.13 | 0.00 | 2.08 | 0.00 | 1.04 | 0.00 | 1.04 | 1.04 | 0.00 | 0.00 | 2.08 | 2.08 | 1.04 | 0.00 | 3.13 | 0.00 | 2.08 | 2.08 | 0.09 |
| C | 13 | 8.33 | 5.21 | 5.21 | 4.17 | 4.17 | 0.00 | 2.08 | 1.04 | 2.08 | 0.00 | 1.04 | 0.00 | 0.00 | 1.04 | 5.21 | 2.08 | 4.17 | 3.13 | 0.20 |
| D | 12 | 5.21 | 0.00 | 0.00 | 0.00 | 4.17 | 0.00 | 3.13 | 0.00 | 0.00 | 0.00 | 1.04 | 0.00 | 0.00 | 0.00 | 11.46 | 0.00 | 9.38 | 1.04 | 0.16 |
| E | 44 | 17.71 | 4.17 | 4.17 | 5.21 | 4.17 | 0.00 | 3.13 | 8.33 | 1.04 | 0.00 | 1.04 | 0.00 | 0.00 | 0.00 | 26.04 | 1.04 | 15.63 | 12.50 | 0.12 |
| Heap 1 | 28 | 17.71 | 1.04 | 9.38 | 1.04 | 16.67 | 0.00 | 17.71 | 1.04 | 0.00 | 0.00 | 2.08 | 0.00 | 0.00 | 5.21 | 17.71 | 0.00 | 20.83 | 16.67 | 0.25 |

LEX-Cefalexin, FEP- Cefepime, CTX-Cefotaxime, CAZ-Ceftazidime, AMP-Ampicillin, FOX-Cefoxitin, TGC-Tigecycline, CIP-Ciprofloxacin, TET-Tetracycline, SXT- Trimethoprim-sulfamethoxazole, AMC-Amoxicillin-clavulanic acid, CHL- Chloramphenicol, GEN- Gentamicin, AMK- Amikacin, MEM-Meropenem, CRO-Ceftriaxone, IPM-Imipenem, NAL-Nalidixic acid